

RE: VA RMC Acute Psych Ward - 90% CD Review New Construction 17,000 SF +/-.

Summary of 2012 LSC 101 Chapter 18 and Chapters 6-10 Requirements.
Passive Fire Membranes (Building Construction Type , Allowable Area, Separation Analysis,
Fire Membranes, Membrane Duct and Transfer Grille Protection, Fire Systems Equipment).
Summary of Fire System Components per Local AHJ Discussions.

The following analysis and information is provided to assist the owner, architect, design team and regulatory agencies understand the fire protection elements (passive, active, alarm) chosen for this facility. There has been a trend of "relaxation" of passive requirements as regulatory agencies have enjoyed the success of automatic fire sprinklers, especially the new Quick Response technology.

The 2010 OSSC is not a design requirement for this project.
The 2010 OFC was chosen as a design requirement to accomodate Roseburg Fire Department.

General Project Overview Description - Building Description

Building use is New Health Care (Chapter 18 LSC) with standard amenities. This is a SINGLE OCCUPANCY building.

The building is one story to be constructed of non rated non combustibile materials per Table 18.1.6.1 (Type II (000)).

The building is designed with 2 smoke compartments. The Smoke compartments are Designated Smoke Compartment # 1 and # 2. Smoke Compartment # 2 has an east and west side - the east side does not have sleeping areas, the west side has sleeping areas. The pubic entry area is part of Smoke Compartment # 2.

Smoke Compartment # 1: Area 3,225 SF. Area is not a "suite".

Smoke Compartment # 2: Area is 13,655 SF. Area includes sleeping and treatment and public entry.

Smoke Compartment # 2 is not a "suite".

Smoke Compartment # 2 is subdivided as follows for functional purposes:

Smoke Compartment Area 2 West - sleeping - 6,595 SF.
Smoke Compartment Area 2 East - non sleeping - 6,225 SF.
Smoke Compartment Area 2 South - non sleeping 1,000 SF.
Total Area of Smoke Compartment 2 is less than 22,500 SF (maximum area).

Exit Travel Paths are defined for each sub-compartment (GI-102).

The treatment portion of the building (sub compartment 2 East) is mental health related with escorted resident traffic.

A "security perimeter" exists between subcompartment 2 East and 2 West.

A "security perimeter" exists between subcompartment 2 East and 2 South.

There are no horizontal exits in this building.

There are no FIRE WALLS in this building.

Topic	2012 LSC
Occupancy	Chapter 18 New Health Care
Corridors: General	18.3.6.2. 0 HR Smoke Resistant
Corridor Waiting Areas	Permitted - 18.3.6.1 (2) w/restrictions.
Corridor Nurse/Home Stations	Permitted...18.3.6.1 (3) w/restrictions.
Corridor Gift Shops	Permitted - 18.3.6.1 (4) w/restrictions.
Corridor Walls	Chapter 18.3.6.2.3. 0 HR Design as Smoke Resistant
Corridor Doors	No Fire Rating 18.3.6.3.1 (1). No closers, no louvers, Positive latching (18.3.6.3.5). tight fitting or smoke seals
Smoke Compartments	50 patients =s 2 Smoke compartments (18.3.7.1.3). 22,500 SF maximum 200 FT travel dist max 1 HR Fire Rating (18.3.7.3 (2)) but does not require fire dampers at duct penetrations
Refuge Area	30 SF net/ 6 SF Net (18.3.7.5.1/18.3.7.5.2)
Independent Egress	2 Exits Required (18.2.4)
Automatic Sprinklers	Section 9-7 Sprinklers Throughout (18.3.5) Sprinkler zones to match smoke compartments (VA FP DM Section 6.1G, NFPA 101 2012 (18.3.71).
Sprinkler Characteristics	Sleeping Smoke Comp's - QR (18.3.5.6).
Fire Alarm System	Section 9-6 Devices Throughout (18.3.4) VA FP DM modifies - deletes occupant notification in resident rooms (purpose of fire alarm system is "staff" notification).
Auto Smoke Detection	Spaces "open" to corridors (18.3.6.1- 4)

Topic	2012 LSC
Allowable Bldg/Area .	
Building Main Floor Building Design Height Building Design Stories	LSC regulates compartment size not building size. LSC regulates compartment size not building height. LSC regulates occupancy level per Table 18.1.6.1. Type II (000) - 1 story above grade maximum.
Type of Construction:	II (000) steel frame - 0 HR - Table 18.1.6.1.
1. Structural Frame; 2. Exterior Bearing Walls 3. Interior Bearing Walls 4. Interior Non Bearing Walls 5. Floor/Clg Construction 6. Clg/Roof Construction	0 HR Integrity Protection. 0 HR Integrity Protection. 0 HR Integrity Protection 0 HR Integrity Protection. 0 HR Integrity Protection 0 HR Integrity Protection
Fire Membranes	
Fire Wall -	Not required.
Fire Barriers:	Hazardous Areas (Table 18.3.2.1)
Fire Partitions: Corridors	FP's Not Defined Corridors 0 HR Construct as "Smoke Resistant" (18.3.6.2.3.1- .3). Fire Damper Not Required - (8.4.1 (18.3.6.2)) Smoke Damper Not Required for Ducting (8.4.6.2). Smoke Damper Required for Air Transfer Grilles (8.4.6.2).
Smoke Barrier:	Smoke Compartment -SubDiv Space Purpose: "Occupancy Relocation". Construct as 1 HR F R (18.3.7.3) Construct as smoke tight (8.5.1). Fire Damper Not Required (8.5.1). Smoke Damper Required for duct and air transfer grills (8.5.5.2). Smoke Damper Deletion (18.3.7.3. Exc 2 for fully ducted).
Smoke Partition: "Smoke Slowdown" not prevention.	Hazardous Area within a Suite. Smoke Tight Design (Sec 8.4.1) No Fire Rating (8.4.1) Fire Damper Not Required. Ducts - Smoke Damper Not Required. Air Trans - Smoke Damper Required (8.4.6.2)
Exterior Wall Rating RE Prop Line	Not a Design Constraint
Shaft Ratings:	1 Story - Not Applicable
Elevator Lobbies, Mach Rooms:	1 Story Not Applicable
Roof	Type II (000) 0 HR (Reference NFPA 220).
Fire Stopping	All Fire/Smoke Membranes (8.3, 8.4, 8.5).
Interior Finishes	
Interior Finish Chapter 18 Spaces:	Minimum Class A or B (18.3.3.2).
Interior Finish Chapter 18 Egress:	Minimum Class A or B (18.3.3.2).
Fire System Details	
Fire Sprinklers:	NFPA 13 or 13R (Section 9-7). Permitted per 6th edition VA Design Manual clarification. NFPA 13 or 13R (VAFP DM Section 6.1 B). NFPA 13R to be provided for this building. Sprinkler Type: QR or Residential.
Fixed Type Auto Exting Systems	None Required (no cooking).
Portable Fire Extinguishers	Required per NFPA 10 (9.7.4.1)
Standpipes:	Not Required (9.7.4.2)
Manual Fire Alarm	Occupant Notification Required Throughout (Section 9-6). VA FP DM 7.3 F 2 modifies LSC - deletes occupant notification in resident rooms (purpose of fire alarm system is "staff" notification not occupant notification).
Manual Stations	Delete at exits, provide at Const Attend (18.3.4.2.2).
Automatic Detection Rooms:	Few Locations (18.3.4.5)
Automatic Detection Sleep Rooms:	Required (9.6.2.10) Circular logic in VA FP DM. -does not specifically delete (VA FP DM 7.4D).
Automatic Detection Corridors:	Required for Open to Egress Spaces (18.3.4.5.2, 18.3.6.1 (2) - (5).)
Automatic Detection: F S Functions	HVAC Shut Down Return and Supply 2,000 CFM, 15,000 CFM Supply and Return Side (90B).
Automatic Detection: F S Functions	Damper FSD or SD (18.3.4.4 - NFPA 90B).

Topic	2012 LSC
Automatic Detection: Elevator Recall	Not Applicable
Automatic Detection: Door Release	Smoke Barrier Doors (opening protection)
Automatic Detection: Door Release	Delayed Egress Permitted 7.2.1.6.1, 18.2.2.2.4 (2). (fire alarm or crash bar timed release).
Controlled Access Door Release	Controlled Egress Permitted 7.2.1.6.1, 18.2.2.2.4 (3). (key card or crash bar timed release).
Exiting	2 or more Means of Egress to Grade or Adjacent Smoke Compartment provided for each Smoke Compartment.
Travel Distance	Maximum 200 FT to Exit (18.2.6.2.1)
Travel Distance	50 FT Room CPOT (18.2.6.2.3).
Travel Distance	30 FT Dead Ends (18.2.5.2).
Topic	2010 OFC
Chapter 3:	
Section 310 Smoking	310 "No" Smoking Signage To Be Provided.
Section 315 Misc Comb Matter	315 24/7/365 Occupancy - Enforcement.
Section 318..Recycle Collection	318 per specific VA design manual.
Chapter 4: Emergency Planning and Preparedness:	
FD Pre-fire planning	Will be established per Fire Department review of 90% contract document submittal.
FD fire suppression procedure	Per NFPA 13E (sprinkled building fire suppression).
Chapter 5: Fire Service Features:	
Section 503 Fire Access Roads	Fire Access Lane - New Fire Lane to be provided to west and south of building. New lane to be 20 FT wide, designed to fire apparatus structural loading. Road to allow approach to within 150 FT of building. "Hammerhead" turnaround provided.
Section 504 Access to Bldg/Roof Section 505...Premise Identification Section 506...Key Boxes Section 507...Hazard to Firepersons	No Roof Access Requirement (less than 4 stories). Shall have address signage per local FD standard. Shall have Key Box per FD direction (KNOX BOX). Owner to provide details of any condition or content which would allow a fast spreading fire, explosion hazard, hazardous materials MSDS to local FD.
Section 508...Fire Water Supplies Section 509 Fire Command Center Section 510 Fire Dept Acc to Equip	See OFC Append. Sect "B" & "C" for fire flow required. Fire Command Center not required No specific equipment noted.
Chapter 6: Building Services and Systems:	
Sections 601-609...	No Specific Applicable Requirements.
Chapter 7: Fire Resist Const (FRR)	Not Applicable.
Chapters 8, 9, 10:	Duplication of OSSC Chapters except for Existing Bldg Requirements.
Chapters 11- 42:	Chapter 14 Fire Flow to be in place and usable when combustibles arrive on construction site.
Appendix "B"	Fire Flow Fire Flow Required per Table B105.1 - for FIRE AREA of approximately 17,000 SF is 2,750 GPM (non sprinkled). Section B105.3.1.1. allows 75% reduction for approved fire sprinklers however establishes 1,500 GPM @ 20 PSI as a baseline minimum. Fire flow required is 1,500 GPM. Sprinkler Design Remote Areas typical demand is in the range of 200 -300 GPM with hose allowance. Fire Sprinkler flow demands are not additive to site fire hydrant demands - most restrictive applies.
Appendix "B" Site Water Supply	Fire Flow Test from CEI Flow Test Nov 8, 2011 indicates fire hydrants west of the Public Safety Building. Hydrant # 7 was flow hydrant, hydrant # 6 was the control hydrant.
Fire Flow Available	Static 95 PSI. 3,150 GPM at 20 PSI. This flow level is sufficient for the fire sprinkler system or site hydrant demand.
New Fire Hydrant	One new hydrant is proposed NE of the building to serve the sprinkler FDC.
Fire Hydrant Distribution	Hose lay distances are less than 600 FT to all building perimeter points per OFC Section 507.5.1 Exception # 2 (based on the existing hydrant SW of the building and the new hydrant NE of the building).
Fire Main Valve Access	PIV not required when control valve is accessible via an exterior door of a mechanical room.
FDC Location	Location on mechanical yard wall is acceptable - low risk to fire emergency responders and is within 100 FT of a fire hydrant capable of full fire sprinkler demand.
Fire Responder Primary Access	Secured Vestibule - North East side near Loading Dock. Fire Alarm Control Panel (FACP) located at this vestibule.
Fire Hydrant Special Features	Stortz connections required, steel bollards for protection.

Revisions	Date	CONSULTANT	STAMP	ARCHITECT	Drawing Title	Project Title	VA Project Number	OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT		
ADDENDUM #2	08/16/12	CREIGHTON ENGINEERING INC. 210 N. UNIVERSITY ROAD, SUITE 100 SPOKANE, WA 99206 (509) 921-9755		 2915 Wingate Street / Eugene, OR 97408 541.521.2477 / Tina.Ely@comcast.net	FIRE LIFE SAFETY DESIGN NARRATIVE	SEISMIC REPLACEMENT BLDG 2 PHASE 1 MINOR ACUTE PSYCHIATRIC WARD	653-322			
							Building Number 086			
							Sheet Number			
							GI-103			
					Approved: Project Director	Location ROSEBURG, OREGON	Date 30 APR 2012	Checked SC	Drawn MM	